We claim:

1. A vaccine composition for oral administration to vertebrate species to stimulate an immune response in the vertebrate species against a preselected antigen through contact of the antigen with a gut-associated lymphoid tissue of the vertebrate species, said composition comprising an antigen formulation in a delivery vehicle consisting essentially of an alginate gel, said antigen being present in an amount effective to induce an immune response in said vertebrate, wherein the alginate gel enhances the immune response against the preselected antigen.

2. The vaccine composition of claim 1 wherein the alginate gel is in the form of discrete particles.

3. A vaccine composition for oral administration to vertebrate species to stimulate an immune response in the vertebrate species against a preselected antigen through contact of the antigen with a gut-associated lymphoid tissue of the vertebrate species, said composition comprising an antigen formulation in a delivery vehicle consisting essentially of an alginate gel and a polymer coating on the alginate gel, said antigen being present in an amount effective to induce an immune response in said vertebrate, wherein the alginate gel enhances the immune response against the preselected antigen.

4. The vaccine composition of claim 1 wherein the antigen is live virus or bacteria.

5. A vaccine composition for oral administration to ruminant species to stimulate an immune response in said species against a preselected antigen, said composition comprising the preselected antigen in an amount effective to induce an immune response in said species, said antigen dispersed in alginate gel in particulate form, and a hydrophilic carrier matrix for said antigen-containing alginate gel particles, said alginate gel particles being dispersed within the hydrophilic carrier matrix, wherein said carrier matrix is formed to carry at least some of the dispersed particles into the post-ruminal portion of the digestive tract of said ruminant species.

6. The vaccine composition of claim 5 wherein the alginate gel particles are coated with a polymer.

7. The vaccine composition of claim 5 wherein the alginate gel particles have an average diameter of about 1 to about 30 microns.

8. The vaccine composition of claim 7 wherein the alginate gel particles are coated with a polymer.

9. The vaccine composition of claim 5 wherein the antigen is live virus or bacteria.

10. A method of vaccinating a vertebrate species, said method comprising the step of orally administering to said vertebrate species the vaccine composition of claim 1.

11. A method of vaccinating a ruminant species comprising the step of administering orally to said species the vaccine composition of claim 5.

12. A method of stimulating a cell-mediated immune response in avian species comprising the step of orally administering a vaccine composition of claim 1.

13. A vaccine composition consisting essentially of an antigen, in an amount effective to induce an immune response to said antigen, an alginate gel, and a pharmaceutically acceptable carrier, wherein the alginate gel enhances the immune response against the antigen.

14. The vaccine composition of claim 13 wherein the alginate gel is in the form of discrete particles and the antigen is dispersed within the alginate gel particles.

15. A vaccine composition consisting essentially of an alginate gel, an antigen dispersed in the alginate gel, a polymer coating on the alginate gel, and a pharmaceutically acceptable carrier, wherein the alginate gel enhances the immune response against the preselected antigen.

16. The vaccine composition of claim 15 wherein the alginate gel is in the form of discrete particles.

17. The vaccine composition of claim 14 wherein the antigen is live virus or bacteria.

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